

**EXCHANGE OF NEWLY-ADDED INFORMATION OVER THE INTERNET  
RELATED APPLICATIONS**

This application claims priority from U.S. Provisional Patent Application Serial Number 60/557,017 which was filed on March 26, 2004

**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention generally relates to the field of accessing and, more particularly to a system and method for collecting and supplying ranked and indexed information as a free or premium (e.g. pay) service to users and advertisers.

**2. Description of the Related Art**

The internet has grown to such that it now contains several billion addresses. Each one of these addresses may have an associated website and content which changes without prior notice. Alternatively, websites may be dynamically linked to other sites or to devices via web services or xhtml links. Such changes in content and linkage may occur several million times a day. Oftentimes, these "postings" and changes are initiated by third parties. The search engines and other services looking for such changes may not always locate or index the sites. As a result, the web users may not be aware of postings or changes to these sites.

The increasing need for reliable and up to the minute search, price and news information has made it

5 increasingly difficult to find and rank (e.g. by most recent order) new information one is looking for in the ever growing global Internet. For example, most conventional search and news gathering engines focus on crawling and indexing an existing and mostly static  
10 inventory of websites. Due to the sheer size of the internet, there is a growing lag between the time a new or existing site or content of the site is published and the time such information becomes available as indexed data on popular search engines. Although most information on the  
15 web is free, many subscribers and advertisers are willing to pay for such information if it can be delivered in a "ranked and indexed" format to each relevant subscriber based on queries supplied by the requestor of the information.

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The global economy is becoming more and more integrated. As a result, access in real time to the latest relevant information has become critical to doing business, such information can make the difference between  
25 successful companies and unsuccessful companies that lag behind with respect to their ability to react to changes in the marketplace. Presently, the majority of competitive information is delivered by specialty research and financial firms via proprietary subscription to many  
30 fragmented networks, such as Bloomberg and Reuters. This information is used primarily by industries, such as the financial markets, which rely on this information. In addition, it is provided without any filtering, and it is up to the user to find relevant data in the vast quantity

5 of publications, such as daily news releases and press announcements.

Although some search functions are available for searching publications, these search functions only  
10 provide limited access to on-line information, and cost additional usage fees. In addition, it is up to the user to initiate a query with clear knowledge and understanding of what he is searching for, as well as how to access the information and find its relevance. In most cases, such a  
15 search will not include the latest 30-90 days worth of publicly available information that resides somewhere on the World Wide Web (www). The concept of broadcasting the news to many subscribers is not new *per se*. However, there is no incentive, process or a single location which  
20 is capable of accepting, aggregating and redistributing all published information sources, as well as providing a fast and reliable control and query based real-time dissemination of such information. Accordingly, there is a need to provide a way to collect and supply ranked and  
25 indexed information service to users and advertisers.

There is also no system that collects and adds advertising or relevant information to such new information and then disseminates it to interested  
30 parties and provides for market based pricing for such advertising services.

As the majority of devices connected to the web migrate from being dominated by PCs to wireless handheld

5 devices, the context and form of search and related services need to change to accommodate the special location, size and space limitations of these devices

#### **SUMMARY OF THE INVENTION**

10 The present invention is a system and method for collecting and supplying ranked, indexed information as a free or premium (e.g. pay) service to users and advertisers. In accordance with the invention, an information exchange is operated so as to aggregate,  
15 publish and subscribe Really Simple Syndication (RSS) , web services and other protocol based information from different web based and proprietary network sources. In addition, real-time notification and access to the information is provided. Recently published news or price  
20 and inventory information, new services or products are published into the system. Upon entry of the information, it is processed and distributed by the system to people, related parties or other systems that have expressed an interest in being notified of the type of published  
25 information as it becomes available. RSS is an XML format for sharing headlines and other web content.

The delivery of the information is based on queries or listing topics, time, relevance and queries that system  
30 users, e.g., subscribers, etc., have placed within the system. In accordance with the invention, providers or "other users" use the information exchange to trigger web services and custom applications, as well as notifications

5     resulting from the information or the results generated by  
processing a flow of information.

10     The present invention permits the creation of a  
marketplace for the attachment of value in the form of  
ads, alerts, competitive information or complimentary  
information for the transfer and distribution of  
information, and provides real-time market pricing for  
different sources of information and the price that  
different entities are willing to pay to tag, attach or  
15     advertise around such information. In addition,  
subscribers and publishers may use the information to sell  
content based on a pre-agreed price, while other  
subscribers may let the information exchange optimize  
their income based on current market prices. In addition  
20     such a system allows the aggregation of users into  
interest groups, customer profiles and spending levels and  
allows the marketplace to price the delivery of ads or  
information to such groups. The exchange allows  
advertisers to trigger ads based on events taking place  
25     and dynamically or manually initiate ads based on such  
events.

30     In accordance with one embodiment, a system for  
exchanging newly added information over the Internet  
provides a system database for storing queries input by  
system users which are used to retrieve information from  
the Internet pertaining to the stored queries. A search  
engine may be enabled to provide additional query results  
by being linked to such exchange and based on information

5    uploaded from other users.    An information exchange is  
provided for receiving information obtained from the  
information providers and/or the other users and for  
directing the received information to specific ones of the  
users based on the users queries, and an indexing and  
10   counter module coupled to the information exchange is  
provided for processing the received information and for  
providing data pertaining to the received information.

15        In accordance with another embodiment, a method for  
exchanging newly added information over the Internet is  
disclosed wherein new data from information providers or  
administrators is sent for processing or uploaded into an  
information exchange.    Search queries are entered and  
stored as static queries in a system database, such static  
20   or dynamic queries being input from users or subscribers  
to the information exchange.    Data is monitored at the  
information exchange to determine whether new data has  
been added to the information exchange by the information  
providers or the third parties.    A determination is made  
25   as to whether any new uploaded data is responsive to the  
static queries and, if new uploaded data is determined to  
match the static queries, the matching data is sent over  
the Internet or other networks to the users or subscriber  
who entered the static queries.

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      The exchange creates an internal link and tagging  
system for all information processed through the exchange  
and ranks it by priority and relevance so a data tree on  
any topic is created and is accessible to all.    This

5 unique, time-line topic based tree provides an historical  
view of any subjects and all relevant information. As new  
alerts and data feeds come pouring into the exchange a new  
form of search and alert can be performed which creates an  
historical and contextual search map with related product  
10 and services links.

Other objects and features of the present invention  
will become apparent from the following detailed  
description considered in conjunction with the  
15 accompanying drawings. It is to be understood, however,  
that the drawings are designed solely for purposes of  
illustration and not as a definition of the limits of the  
invention, for which reference should be made to the  
appended claims. It should be further understood that the  
20 drawings are not necessarily drawn to scale and that,  
unless otherwise indicated, they are merely intended to  
conceptually illustrate the structures and procedures  
described herein.

## 25 **BRIEF DESCRIPTION OF THE DRAWINGS**

The foregoing and other advantages and features of  
the invention will become more apparent from the detailed  
description of the preferred embodiments of the invention  
given below with reference to the accompanying drawings in  
30 which:

FIG. 1 is an exemplary schematic block diagram  
illustrating the interaction between different elements of  
an information exchange in accordance with the invention;

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FIG. 2 is an exemplary schematic block diagram illustrating the processing of information collected by the information exchange of FIG. 1;

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FIG. 3 is an flow chart illustrating exemplary steps of the method of the invention; and

FIG. 4 is a flow chart illustrating alternative steps of the method in accordance with the invention.

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#### **DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS**

The present invention is a system and method for collecting and supplying ranked, indexed information as a free or premium (e.g. pay) service to users and  
20 advertisers. In accordance with the invention, an information exchange is operated so as to aggregate, sort, rank, attach relevant info, publish ,bill, collect and pay the appropriate parties. By using Really Simple Syndication (RSS), web services and other protocol based  
25 information feeds from different web based and proprietary network sources the exchange is always going to be more accurate and current than any news gathering organization or search engine using crawlers or outbound information gathering tools. In addition, real-time notification and  
30 access to the information is provided. In accordance with the invention, recently published news, inventory information, new prices and services or products are published into the system. Upon entry of the information, it is processed and distributed by the system to people,



5 related parties or other systems that have expressed an interest in being notified of the type of published information as it becomes available. RSS is an XML format for sharing headlines and other web content.

10 The system and method of the present invention permits advertisers and information providers to "piggy back" on a data delivery system to deliver custom ads and other relevant complimentary or competitive information to subscribers. The delivery of the information is based on  
15 queries or listing topics, time, relevance and dynamic queries that subscribers have placed within the system or active links generated from within other programs to provide real time interactive work & search environment. In accordance with the invention, providers use the  
20 information exchange to trigger web services and custom applications, as well as notifications resulting from the information or the results generated by processing a flow of information. Users specify topics of interest and can be queried for more detail when information is found to  
25 further validate the notification. For example a programmer working on a virus fix can instantly be notified of work or solutions provided by others or the latest attempts, he can specify only specific sources or search for relevant topics by simply enabling his browser  
30 to be in an active search mode.

Google or Yahoo/Overture permit third parties including publishers and company owners to submit information for inclusion in their search engines, they

5 also "crawl" the web to index many types of web pages. New technology standards are emerging to allow publishers and corporations to broadcast any changes or additions they make to their websites, directories, news groups or press announcements to third parties in an automated way.

10 One such standard is RSS, but other standards may evolve in the future. The RSS standard is an XML format for sharing headlines and other web content. The purpose of such exchange of information is to collect many feeds from different sources, and after processing the information to

15 convert or disseminate the information to interested parties in the same or some other format.

FIG. 1 is an exemplary schematic block diagram illustrating the interaction between different elements of

20 an information exchange in accordance with the invention. With reference to FIG. 1, the system and method of the present invention aggregates published data and collects RSS and other fields from sites, companies and public information sources that do not publish their changes and

25 additions, and processes the aggregated publications and data to be stored temporarily or indexed and stored permanently so such information can be matched to each of the search and profile query entries made by subscribers of the information exchange **100**. Subscribers who are

30 interested in being informed about specific news or announcements and changes made by specific companies may go to a website **110** and request such notifications to be sent to them in a specific format and to a specific

5 device, such as a computer, cell phone, personal digital assistant (PDA) or some other web enabled device.

In accordance with the invention, information exchange **100** receives requests via other programs, brokers  
10 or aggregators or search engines **115** in "wholesale" data feeds. The requests may be generated by an operating system or a specific application while a user operates a wireless device or a computer each time a search is performed using a browser or the Internet. Users **120** may  
15 be asked if they wish to be notified about new results on such a search in the future. If a user accepts the invitation, the query is combined with other information provided by his device or computer, web service, or the search engine used, such as advertisements stored in ad  
20 database **125**.

Upon matching such queries the exchange adds advertisements previously placed by advertisers who used the website **110** and system database **130** to place bids and  
25 contract with information exchange **100** and its partners to deliver specific ads and information to a target audience. The combined information is translated into a complex query based on the user's profile, other previously entered user information and/or a ranking of search  
30 results as well as third party trigger events such as news, key words and change in prices or total users in a specific group. After the delivery of such an alert, the exchange calculates the amount advertisers and third parties need to pay and the amount due to any publishers

5 or users based on the pre agreed terms published on the exchange, and then credits each user account.

The information exchange **100** compares every piece of new data that is collected and matches it to an existing  
10 list of queries that is entered by users **120** or subscribers. If a match is obtained, it is analyzed via a logic flow, text searched and prioritized before a message engine translates it into a web link or combines it with other statistical or relevant data stored in an index and  
15 control module **135**. The match is then sent to the subscriber or agent with any related files or additional information which may be requested by the user or determined important by the exchange . In accordance with the invention, the information exchange **100** may attach  
20 advertising or promotional information provided by third parties based on the subscriber's query or the topic matching a profile of the subscribers. For example if the user has a financial user profile, the alert may include stock symbols of the company's competitors or other news  
25 announcements. If the news is a video clip, the system may send a link or an actual video file to the local device for viewing. In addition, the information exchange **100** may charge a fee to the subscribers and third parties for distributing information based on an agreed amount, a  
30 transaction fee or a dynamic market in which advertisers bid for the right to be included first in such notifications. The information exchange **100** may also utilize artificial intelligence (AI), user feedback, Digital Objects Identifier (DOI) links, xhtml tags or

5 other tools to enhance the ability to match the flow of  
information to the queries in the system, as well as to  
"self train" the system to permit users **120** to prioritize  
and focus their queries to relevant information aggregated  
by information exchange **100**. In general, comparison  
10 engines or other automated systems may contain millions of  
queries that access information exchange **100** at any given  
time and during use. Such users or engines may generate a  
substantial revenue stream if their users conversion ratio  
for goods and services is better than the current web  
15 advertising systems by providing enhanced services to  
their customers.

The Information exchange **100** provides an alternative  
to the traditional methods of submitting information to  
20 the public, such as via a press releases or web sites.  
Typically, such information is submitted with the hope  
that people who receive the information will actually read  
it. In the present invention, conventional systems are  
replaced by a system that gives publishers and sources of  
25 unique information a good reason to publish their data  
through the exchange, product announcements, pricing and  
promotional announcements, new prices, software or service  
releases can be directed to only interested parties. If  
content that matches the interests of subscribers is  
30 found, a function that is approved by the subscriber is  
performed. For example, the function may be providing a  
link about a press release to a specific set of  
subscribers who have indicated an interest in receiving  
such information or loading a demo of the program or

5 service. The exchange can provide real time ranking info of other exchange users so subscribers can make instant decision about their interest to buy or try the service.

10 With additional reference to FIG. 1, activity on information exchange **100** is initiated when new data is generated by publishers **105a**, news networks **105b**, web services **105c** or other information sources (IP). These sources are linked to the exchange via the Internet or via direct communication feeds **L1**. Administrators **145** of  
15 information sites can also access the website **110** through which they can administer their interaction with information exchange **100**. Users **120** may access the exchange **100** via the website **110** or by entering searches via brokers and search engines **115**. These entries are  
20 then translated into one time or ongoing queries with the information exchange **100** or the index and counter module **135**.

In accordance with the invention, continuous  
25 monitoring of millions of information sources can be achieved with minimal effort and very low cost by indicating certain keywords or subjects to the information exchange **100** or other collection programs. Notifications can be sent almost immediately to a variety of  
30 communication devices, such as wireless devices, PDA's, computers, etc. In accordance with the invention, the messages or services will appear in a variety of formats and will support existing standards and proprietary

5 systems, such as email, instant messengers, Short Message Service (SMS) messages and Bloomberg terminals.

In addition, information exchange **100** provides client software interface and personal web-logs which permit  
10 subscribers to manage their accounts, queries, budgets, profiles, historical events and prioritization that are stored in system database **130**. Moreover, information exchange **100** also synchronizes user storage devices with all relevant information that is found. As a result, the  
15 subscribers are continuously provided with the latest data about the topics they care about most, and can access them immediately on their device without the need to access the network or use their computers. Preferably, the subscribers are provided with up to 60 days of the latest  
20 information which may include voice video and data on their topics of choice which they may access locally without internet connections since the exchange synchronizes their data when they are available online.

25 The Information exchange **100** has a direct XML or other type of "feed" from every information provider **140** and from every web server **105c** that indicates a new list of updated content or the occurrence of changes to existing content. The list of changes may be organized  
30 under standard NAICS/SIC codes or use XML headers for classifications to permit the ease with which content is matched and distributed to interested parties. As a result, owners of content are permitted to publish

5 specific information while keeping other information confidential.

Many websites do not allow crawlers or non-subscribers to access internal data. As a result, the  
10 majority of the information on the website is not accessible to search engines. In contrast, information exchange **100** functions as a trusted partner in collecting, processing and notifying specific subscribers with specific information which otherwise would not be  
15 available. Here, the information exchange **100** can also function as a central clearing facility to process large numbers of transactions which require micro payments that would otherwise not be economical for any of the individual information sources to process. The exchange  
20 can manage the login, security, and validation of subscriber information for millions of small publishers or information providers who may not have relationship with such clients but would like to charge for their service. In an embodiment of the invention, information exchange  
25 **100** manages and delivers advertising or competitive content on a publisher's original site when users utilize notifications by the exchange to link or visit the actual website of the publishers.

30 In another embodiment of the invention, the flow of information is used to generate profits for originators of content, aggregators or traders of ad queries, subscribers and advertisers of the information exchange **100**. The exchange provides for full transparency of pricing related



5 to any buy and sell offer for keywords or event triggered  
ads. Such transparency dramatically reduces the need for  
aggregators such as Google, Yahoo and other search engines  
who use a system by which advertisers bid blindly for  
keywords without knowing what the market price is to reach  
10 a user interested in such keyword. Such bids which are  
subsequently translated into commercial listings provided  
side by side with the free search results generated by the  
search engines provide a very high margin for the search  
engine. However the providers of the information and the  
15 users of the search engines do not have a way to generate  
income or obtain a portion of the fees charged by the  
search engine. In addition, the ability of the buyers of  
the keywords to refine their "hits" is limited, because  
Google has limited knowledge about the person performing  
20 the search or his real intent to buy or engage in  
commerce.

In contrast, the information exchange 100 of the  
present invention permits the publishers 105a,  
25 aggregators, subscribers and the information providers 140  
to receive a portion of the fees charged by the  
information exchange, as well as to obtain the true value  
of what buyers and sellers are willing to pay or be paid  
for certain listings or for performing specific  
30 transactions since the exchange charges a transaction fee  
and not the margin between what it pays and what it  
collects from advertisers. Such full disclosure will  
immediately provide lower prices for advertisers and  
aggregate many users who will be happy to be paid for

5 their daily queries. In another embodiment of the present invention, the collection and sale of statistical and usage information about transactions conducted by the exchange provides another source of revenues. Many sources including financial institutions and brokers will  
10 pay for such information since it can be used as an early indicator to show trends with products, companies, prices and services. Here, information exchange **100** makes all such information available to third parties for a fee.

15 In accordance with the present invention, an expanded list of topics that subscribers have interest in is managed, and proactive notification and formatting of such data is provided to users **120** whenever a topic appears on the Internet in the context requested by the subscriber.  
20 As a result, advertisers and businesses are permitted to more accurately target potential customers. In addition, the customization of when and what to send to each subscriber is performed. Different messages and different prices are also sent based on the specific events  
25 generated by third parties or the information exchange **100**. For example, the system of the present invention permits an advertiser to indicate to the information exchange **100** that an ad about life insurance should be sent to all subscribers who have entered the word  
30 "disaster" only when news about a disaster event passes through the exchange. Similarly, a manufacturer may request to send a specific ad with a specific price each time a news release or posting about a product from a competitor passes through the information exchange. Here,

5 the notice may be sent only to a specific set of subscribers which have provided a profile accepted by the manufacturer.

Information exchange **100** also uses a combination of  
10 events to generate leads. For example, a person moving from one home to another will indicate to the exchange he is interested in receiving information pertaining to his new location. Here, a list is created of competitive offers from movers, mortgage banks, insurance agents,  
15 local merchants and other relevant things the subscriber may need but may not think of. The exchange may also permit advertisers to target people who have completed a series of actions and select only those for a special promotion or for target marketing. The subscribers may  
20 request the exchange to always provide competitive information for any offer made by an advertiser as a way to use the exchange to validate the value of a specific offer.

25 With additional reference to FIG. 1, index and counter module **135** is provided so that information exchange **100** may also provide, or allow others to provide data about the information flowing through the exchange, as well as trigger notifications to users **120** when certain  
30 events occur. For example, when a business owner wants to know that the number of times a competitor is mentioned in the news exceeds a certain number or exceeds the number of times his own company is mentioned. Proactive searching and message delivery in this manner also permits

5 subscribers of the information exchange to rank  
information sources and direct the associated data flow to  
specific inboxes or locations. Here, the rankings allow  
advertisers and businesses to better target their ads and  
to obtain a higher ratio of conversions to orders or  
10 visits to their websites.

In another embodiment of the invention, the  
information exchange **100** is used by information providers  
or third parties for custom notifications and the creation  
15 of a dashboard like facilitator which will collect alarms  
and notification information from the Internet and third  
parties. Here, subscribers are permitted to bid to be  
ranked highest to effect the order by which notifications  
may be sent out, as well as the time delay the subscriber  
20 may request before the message may be sent out to other  
competing subscribers.

FIG. 2 is an exemplary schematic block diagram  
illustrating the processing of information collected by  
25 the information exchange **100** of FIG. 1. The information  
collected in the exchange **100** is divided into specific  
flows of information. With specific reference to FIG. 2,  
content from the information sources and publishers **105a**,  
**105b**, **105c** is collected and provided to a message logic  
30 flow module **210**. The message logic flow module **210**  
determines the source, content, priority, size, relevance  
and uniqueness of the information. In alternative  
embodiments of the present invention, other attributes  
such as historical information, related information, a

5 ranking of the importance of the information, uniqueness of information, etc. , are added to the message logic flow. This is possible because all message information is derived from the XML and other protocol information that are provided with website links.

10

Exchange database **220** or a memory resident hash table is used to store queries and counter and statistical analysis data in the index and counter module **135**. The data in the information flow may be compared to other  
15 information located in exchange database **220** (e.g., information stored within index and counter module **135**), and forwarded to other parts of the information exchange **100** or discarded.

20

Information exchangers or other aggregators, such as information brokers **240**, are permitted to exchange additional information with the information exchange **100**. A controller **250** is located in the information exchange **100**. The aggregators or other information exchangers **240**  
25 are managed by the controller **250** which verifies and handles communication and content delivery to the users **120**. The controller 250 may allow certain information to flow directly from 210 to 285 if it determined that the information is for public interest such as a notice from  
30 the federal government or a critical news alert. The controller 250 is also used to validate users 120 and to administer user preferences and rights to access and pay for certain information.

5           After the content in the information is processed by  
the message flow module **210** in the information exchange  
**100**, a specific set of searches is conducted by the text  
search and parse engine **255** against text index and  
database search entries located in the index and counter  
10 module **135** to located matches and related links. The  
matched results are provided to a prioritization engine  
**260** which uses user queries stored in query directory **265**  
of exchange database **220** to rank the search results based  
on rankings stored in ranking directory **270** of exchange  
15 database **220**. The prioritization engine **260** also forwards  
the ranked results to the administration module **275** of the  
information exchange, and accesses a billing and  
settlement database **300** which stores billing, settlement,  
notification and reporting information to confirm the  
20 identity of subscribers who need to be notified of their  
status and credit standing. Database **300** also performs  
all billing functions such as charging, collecting and  
crediting the appropriate parties against their  
transactions. The same member of the exchange may be  
25 charged in one transaction and be paid in the next,  
resulting in netting of all their charges and credits by  
the exchange.

          The prioritization engine **260** forwards the search  
30 results to message engine **285** which packages the search  
results with specific ads stored in ad registry **280** of the  
exchange database **220** or other external ads and results  
and forwards them in the format and at the schedule  
requested by the subscribers to a predetermined

5 destination, such as an internal web-log, external email,  
web agents **297**, communication devices **290** and/or servers  
**295**. The messaging engine 285 updates the billing and  
settlement database, to ascertain who should be charged  
for what and who should be credited as a result of the  
10 notice just sent since each notice may have a different  
combination and content and as such different pricing to  
the parties involved. The information exchange thus allows  
real time pricing for each transaction in contrast to  
today's static advertising environment.

15

After a subscriber is provided with a notification  
that requested content is available, a billing record is  
generated by a combination of the various processing  
modules of the exchange and sent to the billing and  
20 settlement database **300** so that real time settlement and  
billing information can be generated for internal use, as  
well as for use by external users of the information  
exchange **100**. It should be noted that some of the  
aforementioned steps may be skipped if, for example, the  
25 subscriber is a search engine which is using the  
information exchange **100** to collect all published data,  
but is not billed for the receiving the information or any  
advertisements from the exchange.

30 In accordance with the invention, a subscriber may  
enter a website **110** via a computing device **290**, servers  
**295** or web agents **297**. Preferably, the computing device  
is a PDA, computer, mobile phone or some other web enabled  
device.

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The entered search data is distributed by the information exchange **100** to the multiple modules or databases in exchange database **220** and compared to historical results, such as traffic volumes. In accordance with the invention, the subscriber may be provided with instant feedback on the frequency of the entered search data and the likely sources to provide such information in the future. The subscriber may then modify the request or confirm his entry. Upon confirming the entry, the multiple modules or databases in exchange database **220**, in combination with the available data in the billing and settlement database **300**, will determine if such a query is at no fee or should be charged, and will notify the subscriber of the decision. If the transaction is accepted by both parties, all relevant depositories in exchange database **220** are updated, and an attempt to match all new information from the information providers **140** that is loaded into information sources and publishers **105a, 105b, 105c** and the aggregators and brokers **240** is performed. If a match occurs, relevant ads and other information are packaged and distributed to the relevant subscriber(s).

In accordance with the invention, an advertiser **310** may enter a website **110** and identify key words, trigger events, profiles of users or a minimum number of user groups in which he is interested. Here, a subscriber may view historical traffic volumes and prices paid by other advertisers for the identified categories or he may place



5 complex instructions with the administrator module **275** to  
initiate ads or notifications under certain specific  
conditions or be added to certain user or interest groups  
which may pay a high price for accepting notifications.  
Such entries are processed by the information exchange  
10 **100**, exchange database **220** and billing and settlement  
database **300**. The entries are continuously monitored in  
order to optimize matching and spending by advertisers **310**  
on the information exchange **100**. Such system provides for  
market based balance of supply and demand between  
15 advertisers and users or buyers which is governed by  
conversion rates instead of artificial pricing of  
keywords, the latter of which has no correlation to  
results or to the price of such hits.

20 When multiple subscribing members use the exchange  
**100**, it is possible for them to interact in groups and  
view different parts of the bid and ask for spreads for  
different topics and details of the notification engine in  
the billing and settlement database **300**. The multiple  
25 parties will see the real time status of their accounts,  
financial and historical transactions, and the trends and  
activities of the different members. This allows buyers to  
be informed about all offers in the market , provide for  
price transparency and be paid for evaluating different  
30 options from different providers.

Advertisers may embed complex tags, links, triggers  
and other forms of code to track the interaction of users  
with their offers sent by the exchange so they can match

5 ads to actual orders on their systems and measure in high degree of assurance their conversion rates and cost per new order or new customer. By linking such results from their supply chain and internal systems directly to the information exchange, advertisers can automatically direct  
10 their budget away from groups and users who have low conversion rate to leads, notifications, events and triggers which have high conversion rates and reliably count on such data.

15 The contemplated embodiments represent only a small fraction of the uses information exchange **100** may provide to businesses and individuals who need to be notified about events and changes occurring worldwide. For example, in other embodiments, the information exchange  
20 **100** may also function as a third party web service clearinghouse to many other search engines and websites seeking to outsource the notification and management of their subscribers. As a result, an efficient and managed notification system is achieved, which simplifies and  
25 provides for a manageable individual portal of notifications and information. Such a solution may be integrated with existing email or IM programs to provide integrated messaging. Here, information exchange **100** can be used to provide free instant messaging for wireless  
30 devices by placing relevant ads or key word banners based in content sent from one wireless subscriber to another. As a result, the system of the present invention replaces an SMS system, where the sender and receiver pay for each message that is sent over the system. Similarly, an

5 instant messenger or any other program can link via web services or xhtml to information exchange **100** and use it to serve ads or content to the users **120** or subscribers.

10 In another embodiment, information exchange **100** may charge some publishers for their data, while paying other publishers for their data. For example, a company issuing a press release may have to pay for submitting its data to the exchange, while a newspaper writing about such press releases may be paid by the exchange for the submission of  
15 its data. In a similar way, a subscriber to the exchange may pay to receive notifications from specific information sources, while being paid each time the notification from others is read. Here, the function of information exchange **100** is to collect, process, notify and settle the  
20 financial transactions resulting from each transaction triggered by the exchange based on a pre agreed financial formula entered by its members.

FIG. 3 is a flow chart illustrating the steps of the  
25 method of the invention in accordance with the invention. The method is implemented when new data is uploaded to the information exchange, as indicated in step **300**. Here, the new data is content that is uploaded to the information exchange **100** by information providers **140** or  
30 administrators **145**. The new data is made available to publishers **105a**, new networks **105b** and/or web servers **105c** or other information sources (IP).

5        Search queries are entered and stored in the system database by users **120** or subscribers to the system, as indicated in step **310**. In this case, the information exchange **100** receives requests via other programs, brokers or aggregators or search engines **115** in "wholesale" data  
10 feeds. The requests may be generated by an operating system or a specific application while a user operates a wireless device or a computer or each time a search is performed using a browser or the Internet. The users **120** may be asked if they wish to be notified about new results  
15 on such a search in the future. If the invitation is accepted, the query is combined with other information provided by his device or computer, web service, or the search engine used, such as advertisements stored in ad database **125**. Here, advertisers use the website **110** and  
20 system database **130** to place bids and contract with information exchange **100** and its partners to deliver specific ads and information to a target audience.

      The combined information is translated into a complex query based on the user's profile, other previously  
25 entered user information and/or a ranking of search results. This new query is entered into the system database **130** as a predetermined "static" query, which is accessed by information exchange **100**.

30        The information exchange **100** continuously monitors the uploaded data to determine whether new data has been added to the information exchange by the information providers **140** or administrators **145**, as indicated in step **320**. Next, the information exchange **100** compares every piece of

5 new data that is collected to a list of static queries entered by the users **120** or subscribers to locate content in the new data that matches the queries entered by the users **120**, as indicated in step **330**. If no match is obtained, a return to step **320** occurs, where the  
10 information exchange resumes monitoring the uploaded data to determine whether new data has been added to the information exchange.

If a match is obtained, it is analyzed via a logic  
15 flow, text searched and prioritized before a message engine translates it into a web link or combines it with other statistical or relevant data stored in the index and control module **135** (see FIG. 2).

20 At this stage, the information exchange **100** may attach advertising or promotional information provided by third parties based on the subscriber's query or the topic sent to a profile of the subscribers. In addition, the information exchange **100** may charge a fee to the  
25 subscribers and third parties for distributing information based on an agreed amount, a transaction fee or a dynamic market in which advertisers bid for the right to be included first in such notifications.

30 The matching content is then sent to the subscriber or agent (e.g. broker, etc.) who ordered the query over the information exchange **100**, as indicated in step **340**. The information is disseminated to the user or subscriber in a specific format and to a specific device, such as a

5 computer, cell phone, PDA or some other web enabled device.

FIG. 4 is a flow chart illustrating alternative steps of the method in accordance with the invention. The method  
10 is implemented when a search for new data is performed, as indicated in step **400**. Once the new data is located it is aggregated and processed for temporary storage or indexing and stored permanently so such information can be matched to each search and profile query entries made by subscribers of  
15 the information exchange.

The aggregated data is then sorted into new categories, as indicated in step **410**. Next, advertisements and relevant data are included in the new categories, as indicated in  
20 step **420**. Here, the ads are ads that were previously placed in the system by advertisers who used the website **110** and system database **130** to place bids and contract with information exchange **100** and its partners to deliver specific ads and information to a target audience.

25

Alerts are sent to users or subscribers based on the queries that were previously entered, as indicated in step **430**. Here, the combined information is translated into a complex query based on a user's profile, other previously  
30 entered user information and/or a ranking of search results as well as third party trigger events such as news, key words and change in prices or total users in a specific group.

5           Statistics related to the delivery and accessing of the  
ads are generated, as indicated in step **450**. A calculation  
of purchases and payouts by each user is performed, as  
indicated in step **460**. Here, the exchange **100** calculates  
the amount advertisers and third parties need to pay and the  
10   amount due to any publishers or users based on pre agreed  
terms published on the exchange, and then credits each user  
account.

Each content provider and user is then billed, as  
15   indicated in step **470**. The collection of payments is then  
performed, as indicated in step **480**. Here, billing and  
settlement database **300** is used to performs all billing  
functions, such as charging , collecting and crediting the  
appropriate parties against their transactions.

20           The present invention permits the creation of a  
market place for the transfer and distribution of  
information, and provides real-time market pricing for  
different sources of information and the price that  
25   different entities are willing to pay to tag, attach or  
advertise around such information. In addition,  
subscribers and publishers may use the information to sell  
content based on a pre-agreed price, while other  
subscribers may let the information exchange **100** optimize  
30   their income based on current market prices.

Thus, while there have shown and described and pointed  
out fundamental novel features of the invention as applied  
to a preferred embodiment thereof, it will be understood

5   that various omissions and substitutions and changes in the  
form and details of the devices illustrated, and in their  
operation, may be made by those skilled in the art without  
departing from the spirit of the invention. For example, it  
is expressly intended that all combinations of those  
10   elements and/or method steps which perform substantially the  
same function in substantially the same way to achieve the  
same results are within the scope of the invention.  
Moreover, it should be recognized that structures and/or  
elements and/or method steps shown and/or described in  
15   connection with any disclosed form or embodiment of the  
invention may be incorporated in any other disclosed or  
described or suggested form or embodiment as a general  
matter of design choice. It is the intention, therefore, to  
be limited only as indicated by the scope of the claims  
20   appended hereto.